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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,816	06/24/2005	Seiki Tamura	71,051-011	6348
27305	7590	07/17/2009		
HOWARD & HOWARD ATTORNEYS PLLC 450 West Fourth Street Royal Oak, MI 48067			EXAMINER MATTISON, LORI K	
			ART UNIT	PAPER NUMBER
			1619	
			MAIL DATE	DELIVERY MODE
			07/17/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/540,816

Applicant(s)

TAMURA, SEIKI

Examiner

LORI MATTISON

Art Unit

1619

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2009.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-14 is/are pending in the application.
4a) Of the above claim(s) 4-14 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SE-US)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

The Group and/or Art Unit location of your application in the PTO has changed. All correspondence regarding this application should be directed to Group Art Unit 1619.

Status of the Claims

Applicant's amendments filed 04/21/2009 to claims 1, 4, and 6 have been entered. Claims 2 and 3 have been cancelled. Claims 1 and 4-14 remain pending in the current application, of which claim 1 is being considered on its merits. Claims 4-14 remain withdrawn from consideration at this time. References not included with this Office action can be found in a prior action. Any rejections of record not particularly addressed below are withdrawn in light of the claim amendments and applicant's comments.

Preliminary Matters

The examiner notes Applicant's correction regarding the response on 11/07/2008. Applicant asserts that the response on 11/07/2008 was not an amendment (Reply, page 10, paragraph 2).

The Examiner appreciates the refinement to the current claim set. The chemical structure reproduced significantly better and is easy to read. There is no blurriness in the chemical structure and it is easy to read the superscripted numbers of the substituents.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 1 remains rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,187,891 (Rautschek, 2001).

Rautschek teaches block copolymer A. Rautschek's copolymer has a generic formula, $A(BC)_nBA$ (Formula I; column 2, lines 40-65). Rautschek's copolymer has a generic formula, IV (Col.2 line 50) subunit A is taught to be that of formula II, (Col. 2, line 55). The "b" and "c" integers of the "A" subunit may be 0 as taught by the embodiments in Table 1 (Col's 9 and 10, See example H5/CP5, H1/CP1, H2/CP2, H13/CP13), thus subunit A reads on applicants elected species for R^2 . The $(BC)_n$ block of Rautschek corresponds to applicants "c" block. Rautschek's "B" subunit (Formula III; Col. 2, line 65) corresponds to applicant's polyorganosiloxane block. The "d" integer may be between 1 to 100, reading on Applicant's "a" integer. Rautschek's subunit "C" reads on the remaining portion of applicants "c" block, with Rautschek's "b" and "c"

integer being zero (Formula IV, Col. 3 line 5; Table 1 Col's 9 and 10 for specific embodiment see example H5/CP5). Subunit "B" is reads on applicant's polyorganosiloxane. Subunit A, with "b" and "c" integers being zero, read on R². With regard to the average molecular weight of the polyorganosiloxane block, Rautschek teaches the R³ substituents (corresponding to applicants R¹substituents) may be any number of substituted or unsubstituted, saturated, and/or unsaturated hydrocarbon radicals from 1 to 20 carbon atoms (Col. 2 lines 60 to end; top of Col.3) and d is permitted to repeat up to 400 times (Col. 3, lines 1-15) thus the molecular weight may be at least 192,000 depending on the selection of substituents and integers. Alkyl radicals are the preferred radicals for R³ in Rautschek's composition (column 3, lines 40-60). With regard to the polyorganosiloxane block constituting 50-99% of the mass of block copolymer A. Rautschek teaches that the "d" integer may repeat up to 400 times (Col. 3, lines 1-15), while the BC subunit is taught to be greater than 1 but should be chosen depending on the subsequent intended use (Col. 4 lines 25-30). Thus it is obvious to optimize the mass of the polyorganosiloxane block to the mass of the copolymer based upon use of the polymer. With regard to the polyoxyalkylene block, "a" may be up to 200 thus the molecular weight is 8,800 and is within the range of 130 to 10,000. With regard to the average molecular weight of the block, this may be optimized by selection of substituents, the number of times d integer repeats and the selection of duplication of BC subunit based upon the intended of the copolymer. Rautschek further teaches that the weight ratios of a to b to c may change depending on the desired copolymer (Col.5, lines 60-end). Rautschek also teaches that the

molecular weight of copolymers may be easily controlled by controlling the size of "n" and the ratio of (a) to (b) to (c) (Col. 6 lines 1-20). Viscosity and molecular weight also increase with increasing values of "n" (Col. 6 lines 1-20). Rautschek teaches that molecular weight, via the size of n, may be set to necessary requirements (Col. 6 lines 1-20).

With regard to copolymer B, Rautschek also teaches the recited block copolymer B [Col.2 line 50; $A(BC)_nBA$ Formula I]. Generic formula I teaches that subunit A is that of formula II, (Col. 2, line 55) The "c" integer of the "A" subunit may be 0 (see Table 1, Col 9-10, Example H7/CP7 which embodies integers a and b while omitting integer c (Formula IV, Col. 3 line 5; Table 1 Col's 9 and 10 for specific embodiment see example H7/CP7), and thus subunit A reads on applicant's elected species for R^4 . The $(BC)_n$ block of Rautschek corresponds to applicants "c" block. Rautschek's "B" subunit (Formula III; Col. 2, line 65) corresponds to applicant's polyorganosiloxane block. The "d" integer may be between 1-100, reading on Applicant's "a" integer. Rautschek's subunit "C" reads on the remaining portion of applicants "c" block. With regard to the average molecular weight of the polyorganosiloxane block, Rautschek teaches the R^3 substituents (corresponding to applicants R^3 substituents) may be any number of substituted or unsubstituted, saturated, and/or unsaturated hydrocarbon radicals from 1 to 20 carbon atoms (Col. 2 lines 60 to end; top of Col.3) and d is permitted to repeat up to 400 times (Col. 3, lines 1-15) while "n" may preferably repeat to 1 to 20 times (column 2, lines 40-60). Thus the molecular weight may be at least 132-593,160 depending on the selection of substituents and integers. Alkyl radicals are the preferred radicals for

R³ in Rautschek's composition (column 3, lines 40-60) and the calculation was performed with the preferred group of methyl for R³ based upon the preferred teachings that the polypolyorganosiloxane that was used to make a comparison copolymer for CP1 (column 1, lines 55-65). With regard to the polyorganosiloxane block constituting 0.7-97.5% of the mass of block copolymer A, Rautschek teaches that the "d" integer may repeat up to 400 times (Col. 3, lines 1-15), while the BC subunit is taught to be greater than 1 but should be chosen depending on the subsequent intended use (Col. 4 lines 25-30) but is preferably repeats 1 to 20 times (column 2, lines 40-60). Thus it is obvious to optimize the mass of the polyorganosiloxane block to the mass of the copolymer based upon use of the polymer. With regard to the polyoxyalkylene block, "a" and "b" may repeat up to 200 times each may thus the molecular weight is 102-20,400 and reads on the range of 130 to 10,000. With regard to the average molecular weight of the block, this may be optimized by selection of substituents, the number of times d integer repeats and the selection of duplication of BC subunit based upon intended use of the copolymer. As discussed supra, Rautschek further teaches that the weight ratios of a to b to c may change depending on the desired copolymer (Col.5, lines 60-end). Rautschek also teaches that the molecular weight of copolymers may be easily controlled by controlling the size of "n" and the ratio of (a) to (b) to (c) (Col. 6 lines 1-20). Viscosity and molecular weight also increase with increasing values of "n" (Col. 6 lines 1-20). Rautschek teaches that molecular weight, via the size of n, may be set to necessary requirements (Col. 6 lines 1-20). Rautschek also teaches that informing the copolymer of the present invention, it is generally preferable to choose an equimolar

ratio of silicon bonded hydrogen atoms to alkylene groups, however the polyethers (a) and (c) are preferably supplied in excess, thus Rautschek appears to suggest that polyorganosiloxane block is present in 50% weight or less. Rautschek teaches use of the copolymers in an amount of 0.01-8% as foam stabilizers (column 6, lines 50-65) or from 0.1-95% if the copolymers are sold as ready to use (column 7, lines 15-30). Rautschek teaches that one or more polyetherpolysiloxane copolymers may be used as a foam stabilizer (claim 11, column 14, lines 40-50).

A person of ordinary skill in the art would have had a reasonable expectation of success in optimizing within the prior art conditions taught by Rautschek through routine experimentation within the parameters previously taught by Rautschek to yield the recited block copolymers A and B and using the block copolymers A and B together in a composition wherein each is present in a range from 0.01 to 10 mass% because Rautschek teaches each of moieties and the number of repeating units for each moiety for the block copolymer, weights, and preferred substituents, provides embodiments for some of the subunit blocks, and discloses that the copolymers are functionally equivalent and usable together as foam stabilizers with in an amount from 0.01-8%.

Reply

Applicant argues anticipation when addressing obviousness rejections under 35 U.S.C. 103(a) (Reply, pages 11-15).

M.P.E.P. § 2141 states that As reiterated by the Supreme Court in *KSR*, the framework for the objective analysis for determining obviousness under 35 U.S.C. 103

is stated in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966).

Obviousness is a question of law based on underlying factual inquiries. An invention that would have been obvious to a person of ordinary skill at the time of the invention is not patentable.

In the first office action on the merits, the Examiner provided obviousness rejections within the framework of *Graham v. John Deere Co.* The invention would have been obvious to a person of ordinary skill in the art at the time the invention was made in light of the teachings of Rautschek. Selection of chemical moieties and their amounts were based upon the preferred species, amounts, and Examples taught by Rautschek.

Applicant argues that that the examiner has arrived at copolymer A by setting forth a complex selection of optional moieties and exclude particular moieties (Reply page 13, paragraph 2 and 3).

The examiner disagrees. Per M.P.E.P. § 2144.08, the examiner has looked to the preferred substituents and integers taught by Rautschek. Rautschek teaches that the amounts of some moieties may change (like some moieties being absent) and invites the artisan of ordinary skill to optimize the composition to get the desired molecular weights and viscosity for the copolymers use. Rautschek goes so far to even teach the effect on viscosity when optional subunits are not present, or increased (see Table 1; columns 9 and 10)

Applicant alleges that their R² substituent of their block copolymer A can be selected from hydrogen atoms, hydroxyl groups, univalent hydrocarbon groups (Reply, page 15, last paragraph; Reply, page 16, paragraph 1).

The examiner agrees that instant claim 1 does recite that the R² substituent of their block copolymer A can be selected from hydrogen atoms, hydroxyl groups, univalent hydrocarbon groups. **However, claim 1 also recites that R² may also be Y¹-O-(C₂H₄O)_b1(C₃H₆O)_b2-Y² wherein Y¹ is a bivalent organic group and Y² is a hydrogen atom or substituted or unsubstituted univalent hydrocarbon group, which is the species for R² elected by applicant in the Reply of 7/14/08 (please see page 12, last paragraph).** As discussed above in the 103 rejection, Rautschek teaches that R² = Y¹-O-(C₂H₄O)_b1(C₃H₆O)_b2-Y² by teaching (C_mH_{2m}) – [CH₂OCH(CH₂CH₂CH₃)O]_c [CH₂CH (CH₃)O]_b [CH₂CH₂O]_a-O-R¹; wherein (C_mH_{2m}) = Applicant's Y¹; R¹ = Applicant's Y² and c=0. Rautschek discloses the selection of such combination of the polyether moieties and their effect the effect on viscosity when c=0 in Table 1 (e.g. see Example copolymers H1/CP1, H2/CP2, H13/CP13; (columns 9 and 10).

Applicant alleges that the Examiner has not cited any additional references which show the differences of Rautschek and the invention are obvious per M.P.E.P. § 2144.08. Furthermore, applicant alleges that the claimed species or subgenus is encompassed by the prior art genus is not sufficient by itself to establish prima facie case of obviousness (*In re Baird*; page 16, paragraph 2).

The examiner disagrees. M.P.E.P. § 2144.08 (c) directs the examiner to "Consider the Teachings of Structural Similarity." M.P.E.P. § 2144.08 (c) further directs the Examiner to consider any teachings of a "typical," "preferred," or "optimum" species or subgenus within the disclosed genus. If such a species or subgenus is structurally similar to that claimed, its disclosure may *">provide a reason for<" one of ordinary skill in the art to choose the claimed species or subgenus from the genus, based on the reasonable expectation that structurally similar species usually have similar properties. See, e.g., *Dillon*, 919 F.2d at 693, 696, 16 USPQ2d at 1901, 1904. See also *Deuel*, 51 F.3d at 1558, 34 USPQ2d at 1214 ("Structural relationships may provide the requisite motivation or suggestion to modify known compounds to obtain new compounds. For example, a prior art compound may suggest its homologs because homologs often have similar properties and therefore chemists of ordinary skill would ordinarily contemplate making them to try to obtain compounds with improved properties."). In the instant case, a rational selection of integer (i.e. presence or absence) for "a," "b," and "c" is provided in Table 1 by teaching the effect of these subunits on viscosity. Rautschek teaches that it is *preferred* that the R³ substituent (which is equivalent to Applicant's R¹ substituent) are alkyl radicals of 1 to 6 carbon atoms for example methyl, ethyl, n-propyl, i-propyl which reads on Applicant's species for R¹ (i.e. univalent hydrocarbon radicals free of aliphatic unsaturation; column 3, lines 50-65). Motivation, examples, preferences, and how to make, modify, and use the copolymers are taught by Rautschek. Therefore, no secondary references to provide motivation, examples, or the level of the skilled artisan is necessary.

Applicant further traverses and alleges that where the prior art has disclosed a genus, "Office personnel should make the findings as to:

A) the structure of the disclosed prior art genus and that of any expressly described species or subgenus within the genus;

B) any physical or chemical properties and utilities disclosed for the genus as well as any suggested limitations on the usefulness of the genus and any problems alleged to be addressed by the genus

C) the predictability of the technology

D) the number of species encompassed by the genus taking into consideration all of the variables possible. M.P.E.P. § 2144.08 (Reply, page 17, paragraph 2-6)

In addressing the other arguments above, the examiner has discussed the structure, the number of species, and teachings for selection of the claimed species from the prior art based upon Rautschek's preferred substituents and Examples. The examiner has not addressed B and C of the Applicant's traverse.

With respect to (B) of Applicant's traverse. Rautschek provides "real world motivation" for making the species structurally similar to those in the prior art by teaching that his polymers can be used as additives for coatings for flow control, as emulsion stabilizers, and antifoamers (column 1, lines 5-10; column 11, lines 5-end).

Applicant further alleges that their composition is a composition for hair and that there is a general lack of utility with respect to the composition as a hair treatment. Or that one of ordinary skill in the art would have a reason to predict that a foam stabilizer

would have excellent properties as a composition for hair (Reply, page 18, paragraph 1).

In response to applicant's arguments, the recitation of "a composition for hair" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

With respect to the predictability of the technology, part C of the Applicant's traverse, Rautschek provides excellent working Examples which teach how to make the copolymer of the present invention. The level of detail is to the number and types of moieties present in the polyether and the amount of the polyether and the siloxane (amounts and integers for d) in Table 1 (Columns 8-10). Subsequent to teaching the person of ordinary skill how to make the polymers Rautschek teaches how to use them in application examples such in foam systems, antifoams, flow control agents, and as an antifoam for wash liqueurs (columns 10-12)

Applicant asserts that the non-obviousness of block copolymer (A) are equally applicable to block copolymer B are not repeated here for the sake of efficiency (Page 20, paragraph 2).

The examiner disagrees. For the reasons cited above and in the 103 rejection, coblock polymer B is obvious. Please see above for the sake of efficiency.

The applicant asserts that the examiner made conclusory statements and that there is no articulated reason to support the legal conclusion of obviousness (Reply, page 20, last paragraph).

The examiner disagrees. The first action on the merits clearly states, "A person of ordinary skill in the art would have had a reasonable expectation of success in combining the copolymers in a composition because Rautschek teaches that multiple copolymers may be used together in antifoam compositions. The skilled artisan would have been motivated to do so because Rautschek teaches that the polymers may be combined and it is obvious to combine equivalents known for the same purpose (First Action on the Merits, page 8 last paragraph and page 9, first paragraph).

Applicant further alleges that their composition is a composition for hair and a person of ordinary skill in the art would not have reasonably been expected to use copolymers A and B as hair compositions based upon Rautschek's teaching (page 21, paragraph 2).

In response to applicant's arguments, the recitation of "a composition for hair" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the

claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Conclusion

No claims are allowed. No claims are free of the art.

ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **LORI MATTISON** whose telephone number is (571)270-5866. The examiner can normally be reached on 8am-6pm (Monday-Thursday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward can be reached on (571)272-8373. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/L. M./

Examiner, Art Unit 1619

/MP WOODWARD/

Supervisory Patent Examiner, Art Unit 1615